NEW SCHEMES OF A MULTIDIMENSIONAL EQUATION OF HEAT CONDUCTIVITY

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An algorithm is given for the first time for constructing simple, absolutely approximating and absolutely stable schemes for the multidimensional equation

$$\frac{\partial u}{\partial t} = \sum_{i=1}^{p} a_{ii} \frac{\partial^{2} u}{\partial x_{i}^{2}} + au.$$

The stability is investigated by using the method of harmonic analysis.